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NPIC/TDS/D-986-67
23 August 1967

MEMORANDUM FOR: Chief, Development Staff, TDS
THROUGH : Chief, Exploitation Systems Branch, DS
SUBJECT : Wide-Field, High-Power Stereoviewer

1. In FY-65, [] was initiated with [] 25X1
for the design and development of the subject stereoviewer, which is
essentially a specially configured light table for the [] 25X1
[] Stereoscope. 25X1

2. The instrument has been fabricated and delivered to NPIC. The initial evaluation has shown that it is far from satisfactory; however, the contractor has completely exhausted all the allocated funds under the cost contract. Certain features do not meet the expressed provision of the contract while others do not comply with the intent. The following deficiencies were found:

a. The film transport.

(1) The right film.

(a) Extensive scratching and film adherence to the platen was occurring. This was caused by the film rubbing on the underside of the raised top glass platen. Additionally, an extreme electrostatic charge was being built-up between the glass platens by this rubbing. This deficiency has been cured by the undersign's designing and the shop's fabricating a new set of brackets to reposition the rear film roller to enable it to guide the film between the two platens. This roller was required to be lowered 0.237 inches!

(2) Both transports are extremely noisy. It is suspected that the noise is generated from a number of sources such as the motor, the clutch/brake unit, the gear transmission and the film guide rollers. Specifically, the sound level is increased from ambient levels of 42db, 51db and 58db on the As, Bs, and Cs sound meter scales respectively to 89db on all scales. Measurements were made for the roller

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noise alone and the left set increased the ambient level of 58db on the Cs scale to 82db. A comparison with the [] motorized transports indicate that they only increase the ambient noise levels 22db, 19db, and 12db respectively on the As, Bs and Cs scales. In addition to the noise problem, it was found that the transport system does not supply enough power to the spools. Neither transport will wind film onto a fully loaded 9.5 inch reel. This is a specific failure of the contract "specifications."

25X1

b. Light Sources

(1) Brightness. The maximum brightness of the general illumination was found to be only 1300 ft. lamberts. The contract specifically states that 1700 ft. lamberts is required. Furthermore, at this maximum intensity level only 800 ft. lamberts illuminates the corners of the lighted area. This is a drop of over 60%--the contract only allowed a maximum intensity variation of 10%. At the lowest illumination setting there is perceivable flicker; another failure of the contractual terms.

(2) Noise. There is a significant light source buzz evident in both the cold cathode grids.

(3) The High Intensity Light Source. Although the High Intensity Light Source is significantly brighter than the cold cathode grid, the color of the light is very yellow. In addition, preliminary tests indicate that the Versatile Stereoviewer is capable of a higher resolving capability with the lower intensity white cold-cathode light source than with the yellow high intensity source. Furthermore, the high intensity source has been poorly implemented. Although the concept of tracking magnets was attractive, they had to be too large in order to achieve the magnetic flux required for proper tracking between the large spacing of the master and slave magnets necessitated by the raising cover glass platen. As a consequence, the tracking ability is only marginal and the slave magnet (that one attached to the fibre optic cable) interferes with the general illumination masking shade. The master magnet assembly restricts the motion of the stereoscope's rhomboids, whereby all rhomboid positions cannot be conveniently achieved.

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- c. The four extrusions on the microscope transport casting interfere with the upper glass platen when it is completely raised.
- d. More film guides need to be added to enable the leading edge of the film to be easily positioned between the two glass platens during loading.
- e. The clutch brake units on the film spools are applied when power is applied to the instrument. This makes loading the film difficult.
- f. There are many sharp corners on the instrument.

3. Because the contractor has expended all the allocated funds of the cost contract, it is recommended that [redacted] be approached to determine what funding level on a fixed price basis would be required to modify the existing table to bring it to an acceptable level of performance. A rigid specification would be required for each of the above deficiencies. If an acceptable agreement cannot be reached with [redacted] other contractors such as [redacted] should be approached; however, it is strongly recommended that further evaluation by either the Equipment Performance Staff or the operating components be deferred until the above discussed deficiencies can be rectified.

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[redacted]
Exploitation Systems Branch, DS

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